Drug Overdose Deaths in Michigan 2018-2019



Drug Overdose Deaths in Michigan, 2018-2019

Key Findings: Data from the Michigan Death Certificates File

- In 2019, there were 2,354 drug overdose deaths in Michigan, 9.4% fewer than in 2018. This was the biggest percentage decrease in overdose deaths since 2010.
- The age-adjusted rate of drug overdose deaths in 2019 (24.0 per 100,000) was 10.1% lower than the rate in 2018 (26.7 per 100,000).
- Drug overdose death rates were higher for males than for females in 2019 (31.5 vs 16.6 per 100,000). From 2018 to 2019, drug overdose deaths rates for males decreased by 7.6% (from 34.2 to 31.5 per 100,000), while the rates for females decreased by 14.4% (from 19.4 to 16.6 per 100,000).
- Adults aged 25-64 had higher rates of drug overdose deaths in 2019 than those aged 15-24, and 65 and over.
- Since 2017, the drug overdose death rates for Blacks have continued to increase, while whites
 have experienced significant decreases in drug overdose death rates. In 2019, heroin overdose
 rates were 2.3 times higher for Blacks than for whites, cocaine overdose rates were 2.7 times
 higher for Blacks than for whites.
- From 2018 to 2019, the age-adjusted rates of drug overdose deaths involving synthetic opioids (drugs such as fentanyl, fentanyl analogs, and tramadol) decreased by 8.0% (from 16.3 to 15.0 per 100,000), the rates for drug overdose deaths involving heroin decreased by 27.3% (from 6.6 to 4.8 per 100,000), and the rates for drug overdose deaths involving prescription opioid decreased by 21.1% (from 5.7 to 4.5 per 100,000).

Summary

In 2019, 2,354 drug overdose deaths occurred in Michigan. The age-adjusted rates of drug overdose deaths decreased from 26.7 per 100,000 in 2018 to 24.0 in 2019. Both males and females had significant lower drug overdose deaths rates in 2019 than in 2018. There was a significant decrease in the drug overdose deaths rates for whites (from 26.3 in 2018 to 22.9 in 2019), while the drug overdose rates change was not significant for Blacks (from 35.7 in 2018 to 36.6 in 2019) (Table 1).

Overdose deaths involving opioids (heroin, synthetic opioids, or prescription opioids) and cocaine all decreased. Specifically, opioids were involved in 75.1% of drug overdose deaths in 2019, and the opioid overdose deaths rates decreased by 13.7%, from 21.1 in 2018 to 18.2 in 2019. Significant decreases in rates of drug overdose deaths involving opioid occurred for both males and females, whites, and for individuals aged 25 to 34 (Table 2). Compared with 2018, heroin overdose death rates decreased in 2018 from 6.6 per 100,000 to 4.8 in 2019, or about a 27% decline. Overall, heroin overdose death rates decreased for both males and females. Males aged 24 to 44 and females aged 45 to 64 experienced significant decreases in drug overdose deaths involving heroin (Table 3). From 2018 to 2019, synthetic opioid overdose deaths rates decreased by 8%, from 16.3 to 15.0 per 100,000. Drug overdose deaths involving synthetic opioids decreased significantly in two subgroups, females, and whites (Table 4). Compared with 2018, prescription opioids overdose deaths rates in 2019 were significantly lower for males (decreased by 20.9%) and females (decreased by 25.0%), and for whites (decreased by 21.7%) (Table 5). Cocaine overdose death rates decreased by 12.3% from 2018 to 2019 (from 8.1 to 7.1 per 100,000) and the cocaine overdose deaths decreased for both males and females, and for whites. Individuals aged 25 to 34 experienced significant decreases in rates of drug overdose deaths involving cocaine from 2018 to 2019 (Table 6).

Among counties included in this report, the drug overdose deaths rates in 2018 and 2019 were not statistically different (Table 1). Drug overdose deaths rates involving opioid in 2018 and 2019 were also not statistically different in these counties (Table 2). Wayne and Macomb counties experienced significant decreases in drug overdose deaths involving heroin (Table 3). Synthetic opioid county death rates did not change significantly from 2018 to 2019 (Table 4). In addition, county death rates involving prescription opioids and cocaine did not change significantly (Table 5 and Table 6).

The Appendix contains key findings for trends in drug overdose deaths from 1999 to 2019.

- Drug overdose deaths rates have dropped since the highest drug overdose deaths rates reached at 27.7 per 100,000 in 2017. Between 2017 and 2019, there was a 12.4% decline in drug overdose deaths, changed from 2,686 overdose deaths to 2,354.
- While the state is headed toward decreases in drug overdose deaths, not all subgroups experienced decreases. Drug overdose deaths rates decreased 18.8% for whites from 2017 to 2019, drug overdose deaths rates increased 18.4% for Blacks during the same time.
- Drug overdose deaths rates involving synthetic opioids other than methadone doubled each year from 2013 to 2016. While the overdose rates involving synthetic opioids declined for the first time since 2007, synthetic opioids continue to drive drug overdose deaths rates in 2019.
- Between 1999 and 2010, drug overdose deaths involving psychostimulants with abuse potential were close to zero. From 2011 to 2019, the overdose rates involving psychostimulants with abuse potential increased from 0.2 to 2.3 per 100,000.

Table 1. Annual number and age-adjusted rate of drug overdose deaths¹, by sex, age, race, and selected counties – Michigan, 2018-2019

	2018	3	2019		Change from 2018 to 2019 [¶]	
Decedent Characteristics	Number	Rate	Number	Rate	Difference of Rates	% Change in Rate
All	2,599	26.7	2,354	24.0	-2.7	-10.1*
Sex						
Male	1,646	34.1	1,534	31.5	-2.6	-7.6*
Female	953	19.4	820	16.6	-2.8	-14.4*
Age group (yrs.)						
15-24	156	11.6	129	9.7	-1.9	-16.2
25-34	636	49.0	556	42.4	-6.6	-13.5
35-44	596	51.2	538	46.1	-5.1	-9.9
45-54	577	44.7	494	39.4	-5.3	-11.9
55-64	448	31.9	468	33.4	1.5	4.8
65 and older	182	10.6	161	9.1	-1.5	-14.0
Sex and age group	(yrs.)					
Male						
15-24	110	16.0	75	11.1	-4.9	-30.7
25-44	811	65.5	728	58.3	-7.2	-11.0
45-64	614	46.6	613	47.2	0.6	1.2
Female						
15-24	46	7.0	54	8.3	1.3	18.8
25-44	421	34.5	366	29.8	-4.7	-13.7
45-64	411	29.9	349	25.8	-4.1	-13.9
Race						
White	1,984	26.3	1,744	22.9	-3.4	-12.9*
Black	534	35.7	549	36.6	0.9	2.5
American Indian	35	39.0	27	30.6	-8.4	-21.5
Selected counties						
Wayne	775	44.1	754	41.8	-2.3	-5.2
Macomb	333	39.0	268	30.5	-8.5	-21.8
Oakland	183	14.2	157	12.2	-2.0	-14.1
Genesee	221	54.5	175	43.9	-10.6	-19.4
Kent	91	13.9	103	16.1	2.2	15.8
Ingham	93	34.0	92	34.2	0.2	0.6
St. Clair	57	36.1	57	38.8	2.7	7.5
Washtenaw	85	24.2	67	18.9	-5.3	-21.9
Monroe	48	34.9	35	26.2	-8.7	-24.9
Calhoun	51	41.6	37	30.3	-11.3	-27.2
Kalamazoo	52	20.8	41	16.5	-4.3	-20.7
Muskegon	50	30.9	53	31.4	0.5	1.6

Table 2. Annual number and age-adjusted rate of drug overdose deaths involving all opioids 2† , by sex, age, race, and selected counties – Michigan, 2018-2019

	2018	2018		2019		Change from 2018 to 2019 ¹	
Decedent Characteristics	Number	Rate	Number	Rate	Difference of Rates	% Change in Rate	
All	2,036	21.1	1,768	18.2	-2.9	-13.7*	
Sex	_,,,,		_,				
Male	1,341	27.9	1,206	24.8	-3.1	-11.1*	
Female	695	14.4	562	11.6	-2.8	-19.4*	
Age group (yrs.)							
15-24	130	9.6	94	7.1	-2.5	-26.0	
25-34	537	41.4	452	34.5	-6.9	-16.7*	
35-44	477	41.0	422	36.2	-4.8	-11.7	
45-54	440	34.1	352	28.1	-6.0	-17.6	
55-64	340	24.2	340	24.3	0.1	0.4	
65 and older	110	6.4	102	5.8	-0.6	-9.4	
Sex and age group (yrs.)						
Male							
15-24	94	13.6	61	9.0	-4.6	-33.8	
25-44	678	54.8	592	47.4	-7.4	-13.5	
45-64	489	37.1	470	36.2	-0.9	-2.4	
Female							
15-24	36	5.5	33	5.1	-0.4	-7.3	
25-44	336	27.5	282	22.9	-4.6	-16.7	
45-64	291	21.2	222	16.4	-4.8	-22.6	
Race							
White	1,537	20.7	1,288	17.2	-3.5	-16.9*	
Black	434	28.9	437	29.1	0.2	0.7	
American Indian	25	27.9	18				
Selected counties							
Wayne	678	38.7	640	35.6	-3.1	-8.0	
Macomb	281	33.1	215	24.6	-8.5	-25.7	
Oakland	§		§				
Genesee	184	46.4	138	35.2	-11.2	-24.1	
Kent	73	11.1	85	13.3	2.2	19.8	
Ingham	74	26.3	78	28.3	2.0	7.6	
St. Clair	43	28.5	44	31.4	2.9	10.2	
Washtenaw	76	21.6	58	16.9	-4.7	-21.8	
Monroe	39	29.0	30	23.1	-5.9	-20.3	
Calhoun	49	40.1	31	25.6	-14.5	-36.2	
Kalamazoo	43	17.4	24	9.7	-7.7	-44.3	
Muskegon	38	24.1	44	26.3	2.2	9.1	

Table 3. Annual number and age-adjusted rate of drug overdose deaths involving heroin † , by sex, age, race, and selected counties – Michigan, 2018-2019

	201	8	2019		Change from 2018 to 2019 [¶]	
Decedent Characteristics	Number	Rate	Number	Rate	Difference of rates	% Change in Rate
All	639	6.6	471	4.8	-1.8	-27.3*
Male	427	8.9	324	6.6	-2.3	-25.8*
Female	212	4.3	147	3.1	-1.2	-27.9*
Age group (yrs.)						
15-24	35	2.6	18			
25-34	180	13.9	116	8.8	-5.1	-36.7*
35-44	145	12.5	120	10.3	-2.2	-17.6
45-54	130	10.1	89	7.1	-3.0	-29.7
55-64	113	8.1	91	6.5	-1.6	-19.8
65 and older	36	2.1	37	2.1	0.0	0.0
Sex and age group	(yrs.)					
Male						
15-24	27	3.9	§ §			
25-44	220	17.8	151	12.1	-5.7	-32.0*
45-64	155	11.8	134	10.3	-1.5	-12.7
Female						
15-24	§§		§ §			
25-44	105	8.6	85	6.9	-1.7	-19.8
45-64	88	6.4	46	3.4	-3.0	-46.9*
Race						
White	471	6.4	305	4.2	-2.2	-34.4*
Black	153	10.0	149	9.8	-0.2	-2.0
American Indian	§ §		§ §			
Selected counties						
Wayne	261	14.6	203	11.1	-3.5	-24.0*
Macomb	94	11.3	44	5.0	-6.3	-55.8*
Oakland	§		§			
Genesee	51	13.4	15			
Kent	22	3.4	35	6.0	2.6	76.5
Ingham	22	7.9	27	9.8	1.9	24.1
St. Clair	§ §		§ §			
Washtenaw	23	6.5	18			
Monroe	16		§ §			
Calhoun	12		§ §			
Kalamazoo	§§		§ §			
Muskegon	12		12			

Table 4. Annual number and age-adjusted rate of drug overdose deaths involving synthetic opioids other than methadone[†], by sex, age, race, and selected counties – Michigan, 2018-2019

	201	2018		2019		Change from 2018 to 2019 [¶]	
Decedent Characteristics	Number	Rate	Number	Rate	Difference of Rates	% Change in Rate	
All	1,556	16.3	1,445	15.0	-1.3	-8.0*	
Sex							
Male	1,057	22.1	1,023	21.2	-0.9	-4.1	
Female	499	10.5	422	8.9	-1.6	-15.2*	
Age group (yrs.)							
15-24	107	7.9	78	5.9	-2.0	-25.3	
25-34	450	34.7	402	30.6	-4.1	-11.8	
35-44	367	31.6	354	30.4	-1.2	-3.8	
45-54	329	25.5	275	21.9	-3.6	-14.1	
55-64	233	16.6	253	18.1	1.5	9.0	
65 and older	69	4.0	79	4.5	0.5	12.5	
Sex and age group	(yrs.)						
Male							
15-24	74	10.7	48	7.1	-3.6	-33.6	
25-44	548	44.3	524	42.0	-2.3	-5.2	
45-64	377	28.6	382	29.4	0.8	2.8	
Female							
15-24	33	5.0	30	4.6	-0.4	-8.0	
25-44	269	22.0	232	18.9	-3.1	-14.1	
45-64	185	13.5	146	10.8	-2.7	-20.0	
Race							
White	1,145	15.8	1,026	14.0	-1.8	-11.4*	
Black	363	24.0	391	26.1	2.1	8.8	
American Indian	16		11				
Selected counties							
Wayne	564	32.1	560	31.3	-0.8	-2.5	
Macomb	227	26.8	173	20.3	-6.5	-24.3	
Oakland	§		§				
Genesee	138	35.2	117	30.1	-5.1	-14.5	
Kent	44	6.6	66	10.3	3.7	56.1	
Ingham	55	19.6	60	21.9	2.3	11.7	
St. Clair	34	23.2	34	25.6	2.4	10.3	
Washtenaw	66	18.3	45	13.0	-5.3	-29.0	
Monroe	30	23.6	26	20.2	-3.4	-14.4	
Calhoun	38	31.8	29	23.8	-8.0		
Kalamazoo	25	10.6	19				
Muskegon	20	13.3	33	20.1	6.8	51.1	

Table 5. Annual number and age-adjusted rate of drug overdose deaths involving prescription opioids^{3†}, by sex, age, race, and selected counties – Michigan, 2018-2019

	201	2018		2019		Change from 2018 to 2019 [¶]	
Decedent Characteristics	Number	Rate	Number	Rate	Difference of Rates	% Change in Rate	
All	572	5.7	450	4.5	-1.2	-21.1*	
Sex							
Male	335	6.7	268	5.3	-1.4	-20.9*	
Female	237	4.8	182	3.6	-1.2	-25.0*	
Age group (yrs.)							
15-24	30	2.2	21	1.6	-0.6	-27.3	
25-34	113	8.7	87	6.6	-2.1	-24.1	
35-44	127	10.9	101	8.7	-2.2	-20.2	
45-54	134	10.4	92	7.3	-3.1	-29.8	
55-64	122	8.7	116	8.3	-0.4	-4.6	
65 and older	45	2.6	30	1.7	-0.9	-34.6	
Sex and age group	(yrs.)						
Male							
15-24	25	3.6	14				
25-44	147	11.9	114	9.1	-2.8	-23.5	
45-64	134	10.2	119	9.2	-1.0	-9.8	
Female							
15-24	§ §		§ §				
25-44	93	7.6	74	6.0	-1.6	-21.1	
45-64	122	8.9	89	6.6	-2.3	-25.8	
Race							
White	467	6.0	372	4.7	-1.3	-21.7*	
Black	91	5.8	66	4.2	-1.6	-27.6	
American Indian	§ §		§ §				
Selected counties							
Wayne	125	7.0	109	5.9	-1.1	-15.7	
Macomb	74	8.4	70	7.4	-1.0	-11.9	
Oakland	§		§				
Genesee	62	15.0	37	9.2	-5.8	-38.7	
Kent	31	4.8	16				
Ingham	23	8.5	32	11.4	2.9	34.1	
St. Clair	12		12				
Washtenaw	11		13				
Monroe	§ §		§ §				
Calhoun	22	16.8	10				
Kalamazoo	22	8.5	§ §				
Muskegon	15		18				

Table 6. Annual number and age-adjusted rate of drug overdose deaths involving cocaine[†], by sex, age, race, and selected counties – Michigan, 2018-2019

	2018	8	2019		Change from 2018 to 2019 [¶]	
Decedent Characteristics	Number	Rate	Number	Rate	Difference of Rates	% Change in Rate
All	783	8.1	682	7.1	-1.0	-12.3*
Sex						
Male	506	10.5	454	9.4	-1.1	-10.5*
Female	277	5.8	228	4.8	-1.0	-17.2*
Age group (yrs.)						
15-24	46	3.4	32	2.4	-1.0	-29.4
25-34	195	15.0	138	10.5	-4.5	-30.0*
35-44	181	15.6	181	15.5	-0.1	-0.6
45-54	196	15.2	157	12.5	-2.7	-17.8
55-64	138	9.8	137	9.8	0.0	0.0
65 and older	27	1.6	37	2.1	0.5	31.3
Sex and age group (yrs.)					
Male						
15-24	33	4.8	20	3.0	-1.8	-37.5
25-44	234	18.9	204	16.3	-2.6	-13.8
45-64	217	16.5	205	15.8	-0.7	-4.2
Female						
15-24	13		12			
25-44	142	11.6	115	9.4	-2.2	-19.0
45-64	117	8.5	89	6.6	-1.9	-22.4
Race						
White	521	7.1	427	5.8	-1.3	-18.3*
Black	233	15.8	234	15.8	0.0	0.0
American Indian	11		§ §			
Selected counties						
Wayne	305	17.9	290	16.3	-1.6	-8.9
Macomb	91	10.8	68	7.9	-2.9	-26.9
Oakland	§		§			
Genesee	84	19.6	75	19.3	-0.3	-1.5
Kent	27	4.1	36	5.7	1.6	39.0
Ingham	28	10.0	33	12.2	2.2	22.0
St. Clair	12		§ §			
Washtenaw	36	9.3	27	7.4	-1.9	-20.4
Monroe	13		§ §			
Calhoun	12		§ §			
Kalamazoo	§ §		§ §			
Muskegon	12		12			

Notes on Data

Source: Michigan Death Certificates, Division for Vital Statistics and Health Statistics, MDHHS

- 1. Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40-X44 (unintentional), X60-X64 (suicide), X85 (homicide), and Y10-Y14 (undetermined intent). Of the drug overdose deaths in 2019, 81.3% were unintentional, 6.6% were suicides, 12.0% were of undetermined intent, and less than 1% were homicides. Rates are age-adjusted using the direct method and the 2000 U.S. standard population, except age-specific crude rates. All rates are per 100,000 population. Cells with less than nine deaths are not reported. Rates based on <20 are not considered reliable and not reported.
- 2. Drug overdose deaths, as defined, that have opium (T40.0), heroin (T40.1), natural and semisynthetic opioids (T40.2), methadone (T40.3), synthetic opioids other than methadone (T40.4), or other and unspecified narcotics (T40.6) as a contributing cause.
- 3. Drug overdose deaths, as defined, that have natural and semisynthetic opioids (T40.2) or methadone (T40.3) as a contributing cause.
- † Drug categories are not exclusive because deaths may involve more than one drug. Summing of categories will result in greater than the total number of deaths in a year.
- Not reported due to higher percentage of drug overdose deaths with no drug specificity (53.6% in 2018 and 68.8% in 2019).
- §§ Cells with ≤ nine deaths
- ¶ Percent change is the difference between 2018 and 2019 rates divided by the 2018 rate, multiplied by 100. Nonoverlapping confidence intervals were used if the number of deaths was <100 in 2018 or 2019, and z-tests were used if the number of deaths was ≥100 in both 2018 and 2019. Note that the method of comparing confidence intervals is a conservative method for statistical significance.
- * Statistically significant at 0.05 level.

Definitions

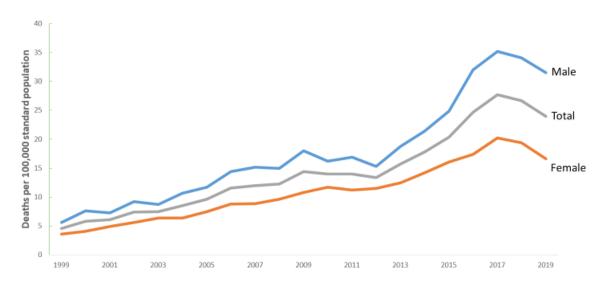
Drug overdose deaths: Include deaths resulting from unintentional or intentional overdose of a drug, being given the wrong drug, taking a drug in error, or taking a drug inadvertently.

Natural and semisynthetic opioids: Include such drugs as morphine, codeine, hydrocodone, and oxycodone.

Synthetic opioids other than methadone: Include such drugs as fentanyl, fentanyl analogs, and tramadol.

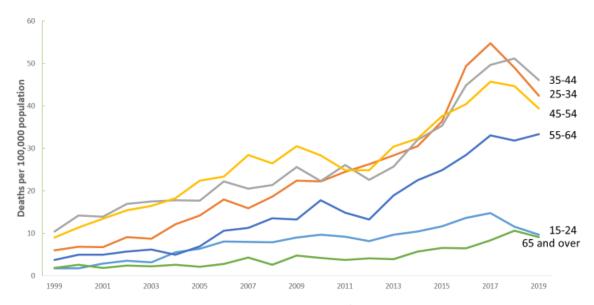
Appendix. Drug overdose deaths in Michigan, 1999-2019

Figure 1. Age-adjusted drug overdose death rates - Michigan, 1999-2019



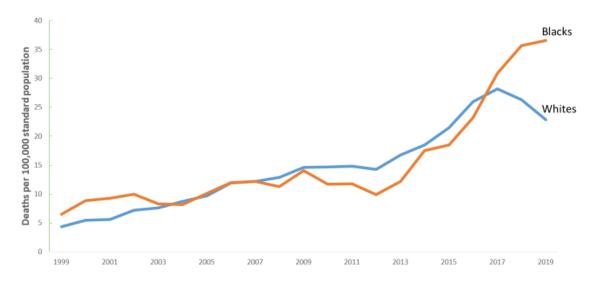
- The age-adjusted rate of drug overdose deaths increased six-fold from 4.6 per 100,000 population in 1999 to 26.7 in 2018, then decreased to 24.0 in 2019.
- The rate in 2019 was 10.1% lower than the rate in 2018.
- For each year, rates were higher for males than females. For males, the rate increased from 5.6 in 1999 to 34.1 in 2018, then decreased to 31.5 in 2019. For females, the rate increased from 3.6 in 1999 to 19.4 in 2018, then decreased to 16.6 in 2019.

Figure 2. Drug overdose death rates by selected age group - Michigan, 1999-2019



- The rates of drug overdose deaths increased from 1999 to 2017 for all age groups (Figure 2). From 2018 to 2019, the rates decreased for most age groups except adults aged 55 to 64.
- From 1999 to 2019, the greatest percentage change in drug overdose rates occurred among adults aged 25-34, increasing from 6.0 per 100,000 in 1999 to 54.8 in 2017, a more than nine-fold increase, then decreased to 49.0 in 2018 and 42.4 in 2019.

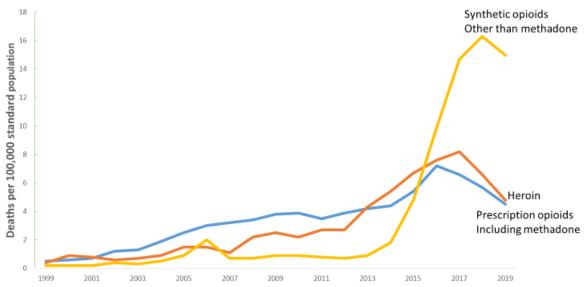
Figure 3. Age-adjusted drug overdose death rates by race – Michigan, 1999-2019



Source: Michigan Death Certificates, Division for Vital Records and Health Statistics/Michigan Department of Health and Human Services

• From 1999 through 2003, rates were higher for Blacks than whites, between 2004 and 2009, the rates were similar for both, and from 2010 through 2016, rates were higher for whites than for Blacks. In 2017, the drug overdose deaths rates for Blacks surpassed the rates for whites. From 2017 to 2019, the rates for whites decreased by 18.8% (from 28.2 to 22.9). For Blacks, the rates increased by 18.4% (from 30.9 to 36.6).

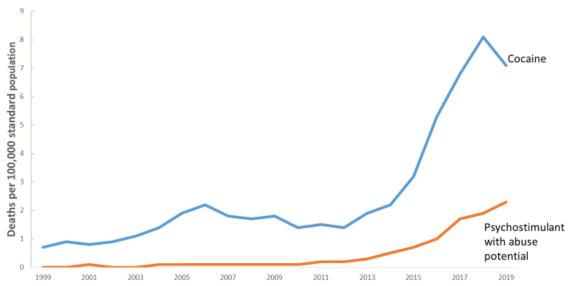
Figure 4. Age-adjusted drug overdose death rates by opioid category - Michigan, 1999-2019



Drug categories are not mutually exclusive.

- The rates of drug overdose deaths involving synthetic opioids other than methadone, which include drugs such as fentanyl, fentanyl analogs, and tramadol, increased from 0.2 per 100,000 in 1999 to 0.9 in 2013, 1.8 in 2014, 4.8 in 2015, 9.9 in 2016, 14.7 in 2017, and 16.3 in 2018. The drug overdose deaths rates involving synthetic opioids decreased to 15.0 in 2019.
- The rates of drug overdose deaths involving heroin increased by 200% from 2012 through 2017, then declined by 27.3% from 2018 to 2019.
- The rates of drug overdose deaths involving prescription opioids including methadone increased from 0.5 per 100,000 in 1999 to 2.5 in 2005, 5.4 in 2015, 7.2 in 2016, then decreased to 6.6 in 2017. The rate in 2019 (4.5 per 100,000) was lower than in 2018.

Figure 5. Age-adjusted drug overdose death rates involving stimulants, by type of stimulant - Michigan, 1999-2019



Drug categories are not mutually exclusive.

- The age-adjusted rates of drug overdose deaths involving cocaine increased from 0.7 in per 100,000 in 1999 to 2.2 in 2006, then decreased to 1.4 in 2010. From 2012 through 2018, the rates increased on average by 34% per year to a rate of 8.1 in 2018. The drug overdose deaths rates involving cocaine decreased to 7.1 in 2019.
- The age-adjusted rates of drug overdose deaths involving psychostimulants with abuse potential, which include drugs such as methamphetamine, amphetamine, and methylphenidate, increased from 0.0 in 1999 to 0.2 in 2011. From 2012 through 2018, the rates increased on average by 46% per year to a rate of 1.9 in 2018. The drug overdose deaths rates involving psychostimulants with abuse potential increased by 21.1% (from 1.9 in 2018 to 2.3 in 2019).

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